



Region 10, 1200 Sixth Avenue, Seattle WA 98101

**COLUMBIA RIVER BASIN FISH
CONTAMINANT SURVEY**

VOLUME II

Data Appendices

January 2002

**Prepared by
U.S. Environmental Protection Agency
Region 10
Seattle, Washington**

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VOLUME 2 DATA APPENDICES

Prepared for

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APPENDIX C4

Sum of PCB congener 2,3,7,8-TCDD TEQs for individual samples

APPENDIX C5

Sum of dioxin, furan, and PCB congener 2,3,7,8-TCDD TEQs for individual samples

INTRODUCTION

ORGANIZATION OF THE REPORT

This report contains data appendices for fish collected and analyzed as part of the Columbia River Basin Fish Contaminant Survey. Appendix A contains descriptive data on the length, weight, percent lipid, and collection location of fish collected for tissue analysis. Appendix B contains fish tissue chemical concentrations organized by chemical group: metals, semivolatiles, guaiacols and phenols, pesticides, PCBs, and dioxins and furans. Appendix C contains 2,3,7,8-TCDD toxicity equivalent factors (TEF) and toxicity equivalent concentrations (TEQ) for dioxin, furan, and PCB congeners. Metal concentrations are expressed on a wet weight basis. Organic chemical concentrations are presented on a wet weight and lipid-normalized basis. All abbreviations and data qualifiers used in the appendices are listed in the following section.

DATA QUALIFIERS AND ABBREVIATIONS

ABBREVIATIONS

WB - Whole body
f - female
FS - Fillet with skin
FW - Fillet without skin
E - Eggs
Qual - Qualifier
m - male
nr - Not reported - analyte not measured in species
nc - Not calculated - percent lipid data not available
u - Undetermined
TCDD - tetrachlorodibenzo-*p*-dioxin
TEF - 2,3,7,8-TCDD toxicity equivalent factor
TEQ - 2,3,7,8-TCDD toxicity equivalent concentration

DATA QUALIFIERS FOR ORGANIC CHEMICALS

U The analyte was analyzed for, but was not detected above the sample quantitation limit. The associated numerical value is based upon the lowest calibration point of the 5-point initial calibration curve and any dilutions which were made to the sample due to high concentrations or matrix effects.

If a decision requires quantitation of the analyte below the associated numerical level, reanalysis or alternative methods should be considered. The technical staff is available to discuss available options.

J The analyte was analyzed for and positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be considered for decision making and are usable for many purposes.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

UJ The analyte was analyzed for and not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in this sample.

If a decision requires quantitation of the analyte close to the associated numerical level, reanalysis or alternative analytical methods should be considered.

DATA QUALIFIERS FOR SUMMED ORGANIC CHEMICALS

Ua One or more of the summed analytes was not detected above the reported quantification limit. Therefore, the concentration of the analyte or analytes were summed using a value equivalent to one-half their quantification limit.

Ub One or more of the summed analytes was not detected above the quantification limit in all samples of that species and sample type. Therefore, the concentration of the analyte or analytes were assumed to be equal to zero and were not included in the summation. All other analytes not detected above the quantification limit were summed using a value equivalent to one-half their quantification limit.

Uc All of the summed analytes were not detected above the reported quantification limit in all samples of that species and sample type. Therefore, the concentration of all analytes were summed using a concentration equivalent to their quantification limit.

DATA QUALIFIERS FOR INORGANIC CHEMICALS

U Element was analyzed but not detected. The associated numerical value is the method detection limit, as defined in 40 CFR Part 136, Appendix B.

J The reported value is an estimate of the presence of interference. An explanation is included in the data validation report (*Assessment of chemical contaminants in*

*fish consumed by four Native American tribes in the Columbia River Basin:
Volume 4. Draft quality assurance summary to the project final report. Revision
2.2. U.S. Environmental Protection Agency, Region 10, Seattle, WA.)*

- N Spiked sample recovery results were not within control limits.
- UJ Element was analyzed for but was not detected. The reported value is an estimate and may be inaccurate or imprecise.

APPENDIX A

Descriptive Data for Individual Fish and Fish Composites

APPENDIX A1

Sex, length, and weight of individual fish analyzed in composite samples

APPENDIX A2

Summary of data collection and descriptive data for fish composites

APPENDIX B

Fish Tissue Concentrations by Chemical Group

APPENDIX B1

Metals

APPENDIX B2

Semivolatiles

APPENDIX B3

Guaiacols and Phenols

APPENDIX B4

Pesticides

APPENDIX B5

PCBs

APPENDIX B6

Dioxins and Furans

APPENDIX C

Dioxin, furan, and PCB 2,3,7,8-TCDD Toxic Equivalency Factors and Toxic Equivalents

APPENDIX C1

World Health Organization 2,3,7,8-TCDD toxic equivalency factors (TEFs)
for dioxins, furans, and PCBs

APPENDIX C2

2,3,7,8-TCDD toxic equivalents (TEQs) for dioxins, furans, and PCBs

APPENDIX C3

Sum of dioxin and furan 2,3,7,8-TCDD TEQs for individual samples

APPENDIX C4

Sum of PCB congener 2,3,7,8-TCDD
TEQs for individual samples

APPENDIX C5

Sum of dioxin, furan, and
PCB congener 2,3,7,8-TCDD TEQs
for individual samples